REMARKS

Upon examination, claims 1-22, 29, 32, and 34-38 were pending in the application, with claims 9-19, 22, 34-36, and 38 being withdrawn from consideration, and claims 1-8, 20, 21, 29, 32, and 37 being subject to examination. As is noted above, claims 4, 5, 9-19, 22, 29, 34-36, and 38 have now been canceled. Claims 1, 3, 6, 7, 8, 20, 21, 32, 37 have been amended, and new claims 39 to 42 have now been introduced. Support for new claims 39 and 40 can be found, for example, at page 7, lines 10-16, and at page 8, lines 28-31, while support for new claims 41 and 42 can be found in original claims 7 and 8, respectively, as well as at page 5, line 26 through page 6, line 21 of the application. No new matter has been added by the present amendments.

The specification and claims 1, 6, and 37 were objected to due to certain informalities. Claims 1-8, 20, 21, 29, 32, and 37 were rejected under 35 U.S.C. § 112, first paragraph; claims 1-8, 20, 21, 29, 32, and 37 were rejected under 35 U.S.C. § 112, second paragraph; claims 1-3, 5, 7, 20, 21, 29, and 32 were rejected under 35 U.S.C. § 102(b); claims 1-7, 20, 21, and 37 were rejected under 35 U.S.C. § 102(e); claims 29 and 32 were rejected under 35 U.S.C. § 103(a); and claims 1 and 6-8 were rejected under the judicially-created Doctrine of Obviousness Type Double Patenting. Each of the objections and rejections is addressed below.

Objections to the Specification and Claims

In response to the objection related to the presence of a priority claim before the "Background of the Invention," Applicants note that, as is set forth above, a paragraph including a complete priority claim has been added to the specification. Applicants also note that a similar paragraph was requested to be added to specification in an amendment filed on July 10, 2003, but

entry of this amendment was not acknowledged by the Examiner.

As to the objection to use of the term "IAPP" on page 3, line 18, Applicants note that this term has been spelled out in full ("islet amyloidogenic polypeptide") in the first instance of use, as was suggested by the Examiner.

In response to the objection to Applicants' use of "I" in claim 1, Applicants note that, as was suggested by the Examiner, claim 1 has been amended to indicate "Formula I." Also in claim 1, the phrase "all-[D] peptide" has been removed, and the references to D amino acids in this claim now read as follows "...peptide of Formula I consisting of all [D]-amino acids...."

As to the objection to the use of the phrase "all-[D] isomer peptide" in claim 6, Applicants note that this term is no longer present in this claim.

Further, as was suggested by the Examiner, the phrase "as set forth in SEQ ID NO:3" in claim 37 has been replaced with "of SEQ ID NO:3." A similar amendment was made to claim 8.

Rejections under 35 U.S.C. § 112, first paragraph

Claims 1-8, 20, 21, 29, 32, and 37 were rejected under 35 U.S.C. § 112, first paragraph for lack of adequate written description. In particular, the Examiner states that the specification does not provide a description of the structural characteristics of functional peptidomimetics, retro-isomers, and retro-inverso isomers. In response, Applicants note that, in the interest of expediting prosecution, the terms peptidomimetics and retro-inverso isomers have been removed from the claims. Thus, the claims now specify antifibrillogenic agents that comprise a peptide of Formula I that consists of all [D]-amino acids or a retro-isomer of such a peptide. As to the term retro-isomers, we note that this term is clearly defined on page 10, lines 24-26 of the application,

as indicating a reverse of the direction of the peptide backbone. Further, examples of retro-isomers are set forth in the application as peptides having the sequences of SEQ ID NO:5 and SEQ ID NO:13. Thus, as it is clear that all of the peptides encompassed by the structural parameters of Formula I (or retro-isomers thereof) are described in the application, Applicants respectfully request that this rejection be withdrawn.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 1-8, 20, 21, 29, 32, and 37 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite on several grounds, which are addressed below.

The Examiner first notes that claim 1 is indefinite in including the terms "isomer thereof" and "peptidomimetic." In response, Applicants note that these terms have been removed from claim 1.

Claim 7 was rejected on the basis that SEQ ID NO:5, SEQ ID NO:13, SEQ ID NO:23, and SEQ ID NO:24 are not within Formula I of claim 1, from which claim 7 depends. In response, Applicants note that SEQ ID NO:5 and SEQ ID NO:13 have been added to claim 6, which specifies retro-isomer peptides that fall within the scope of claim 1. As to SEQ ID NO:24, we note that Formula I of claim 1 has been amended to include "Phe-Phe-NH_2" in the definition of Xaa_4, which thus now provides proper antecedent basis for SEQ ID NO:24. Finally, we note that reference to SEQ ID NO:23 has been removed from claim 7.

Claims 20-22 were rejected for reciting the phrase "in association with," which has now been removed from claims 20 and 21 and replaced with the term "and." As is noted above, claim 22 has been canceled.

The rejection of claim 29 as being indefinite in referring to IAPP is now moot, as this claim has been canceled.

Claim 32 was rejected for indefiniteness in depending from canceled claim 31. In response, Applicants note that claim 32 has now been amended to depend from claim 1.

Rejections under 35 U.S.C. § 102

Claims 1-3, 5, 7, 20, and 21 were rejected under § 102(b) as being anticipated by Rich et al., WO 99/10374, on the basis that this reference teaches a conjugate of β-amyloid-binding peptide and cyclosporin A (CsA), in which the β-amyloid-binding peptide portion consists of the sequence KLVFF and the CsA portion comprises at least two D amino acids. As is noted above, claim 1 has been amended to specify antifibrillogenic agents that comprise a peptide of Formula I consisting of all [D]-amino acids, or a retro-isomer of such a peptide. The Rich et al. reference does not describe such peptides, as the amino acids in the peptide sequence KLVFF of the Rich et al. reference are in the L form. This rejection also does not apply to the dependent claims noted by the Examiner (i.e., claims 2, 3, 7, 20, and 21; claim 5 has been canceled), as these claims, in depending from claim 1, also require that the claimed peptides comprise all [D]-amino acids, and such peptides are not described in the Rich et al. reference. This rejection should therefore be withdrawn.

Claims 29 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kayed et al., J. Mol. Biol. 287:781-796, 1999, on the basis that this reference teaches an islet amyloid peptide for inhibiting amyloid aggregation, and what the Examiner considers to be a pharmaceutical composition that comprises the peptide. This rejection is now moot, in light of

the cancellation of claim 29, and the amendment to claim 32, by which dependency of this claim has been amended to be from claim 1.

Claim 29 was rejected under 35 U.S.C. § 102(b) as being anticipated by Moriarty et al., Biochemistry 38:1811-1818, 1999, on the basis that this reference teaches a mutant islet amyloid polypeptide and its use in inhibiting aggregation and amyloid formation. This rejection is now moot, as claim 29 has been canceled.

Claims 29 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Pan et al., Proc. Natl. Acad. Sci. U.S.A. 90:10962-10966, 1993, on the basis that this reference teaches a scrapie prion protein and its use to treat amyloid plaques that comprise this protein. This rejection is moot, in light of the cancellation of claim 29 and the amendment of claim 32 to depend from claim 1, as noted above.

Claims 1, 20, and 21 were rejected under 35 U.S.C. § 102(e) as being anticipated by Green et al., U.S. Patent No. 6,670,399, which the Examiner states teaches a peptidomimetic compound that inhibits cerebral amyloid angiopathy and a pharmaceutical composition that includes the peptidomimetic. This rejection is now moot, as the term "peptidomimetic" has been removed from the present claims.

Claims 1-4, 6, 7, 20, and 21 were rejected under 35 U.S.C. § 102(e) as being anticipated by Nordstedt et al., U.S. Patent No. 6,331,440, on the basis that this reference, in Example 5, teaches a peptide comprising the sequence KLVFF, in which all of the amino acid residues are in the D form. Applicants respectfully disagree with this rejection. In particular, Applicants note that Example 5 does not teach a peptide comprising the sequence KLVFF in which all of the amino acids are in D form. Rather, in Example 5, the KLVFF peptide (in which all amino acids

are in the L form) was used to screen a library of D-amino acid peptides to identify such peptides that bind to KLVFF. The only example of a peptide that consists entirely of D-amino acids that is described in this Example is one that includes the sequence LFLRR, which clearly is not within the scope of the present claims. Applicants thus respectfully request that this rejection be withdrawn.

Claims 1-7, 20, 21, and 37 were rejected under 35 U.S.C. § 102(e) as being anticipated by Findeis et al., U.S. Patent No. 6,303,567. This rejection is respectfully traversed.

At the outset, Applicants note that, to be properly considered as being anticipatory, a prior art reference must contain an enabling disclosure. *Chester v. Miller*, 906 F.2d at 1576 n.2, 15 U.S.P.Q.2d at 1336 n.2 (Fed. Cir. 1990); *see also Titanium Metals Corp. of America v. Banner*, 778 F.2d at 781, 227 U.S.P.Q. at 778 (Fed. Cir. 1985); *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1578, 18 U.S.P.Q.2d 1001, 1011 (Fed. Cir. 1991); *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 54 U.S.P.Q.2d 1299 (Fed. Cir. 2000), citing *In re Donohue*, 766 F.2d 531, 533, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985). Applicants further note that, in the art of molecular biology, courts have found that a specification may be deemed *prima facie* non-enabling for embodiments that are not specifically presented in the specification as working examples. *Ex parte Singh*, 17 U.S.P.Q.2d 1714, 1716 (Bd. Pat. App. & Int. 1990); *In re Marzocchi*, 439 F.2d 220, 223, 169 U.S.P.Q. 367, 169-70 (C.C.P.A. 1971). In light of these tenets, Applicants respectfully submit that the Findeis et al. patent is not an enabling anticipatory reference, which should not be considered to anticipate the present claims.

As is noted above, the agents of the present claims are required by the claims to be antifibrillogenic and able to be used for inhibiting amyloidosis and/or for cytoprotection. Even

though Findeis broadly discloses many peptides, derived from various regions of the β-amyloid peptide (and which may comprise D-amino acids), Findeis has not provided any working examples of all D-amino acid-containing peptides that fall within the scope of the present claims. Nor has Findeis provided any indication or evidence that such all D-amino acid peptides would inhibit amyloidosis, as required by the present claims. Indeed, the only working examples of all D-amino acid peptides provided by Findeis are outside of the scope of the present claims, as the claims of the present application require the presence of a lysine in the peptide sequences (Xaa_1), and this amino acid is not present in the peptides of the Findeis working examples. Accordingly, because the antifibrillogenic agents of the present claims are not specifically presented in Findeis' specification as working examples, Applicants submit that Findeis is *prima facie* non-enabling to the present claims (*Ex parte Singh* and *In re Marzocchi*, supra).

Applicants further note that it has been established by the courts that a genus does not always anticipate a species within that genus. *See In re Baird*, 16 F.3d 380, 29 U.S.P.Q.2d 1550 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992); *Merck & Co. v. Biocraft Lab., Inc.*, 874 F.2d 804, 10 U.S.P.Q. 2d 1843 (Fed. Cir. 1989); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1262, 9 U.S.P.Q.2d 1962, 1970 (Fed. Cir. 1989). See also *In re Meyer*, 599 F.2d 1026, 1031, 202 U.S.P.Q. 175, 179 (C.C.P.A. 1979) finding that prior art genus did not "*identically disclose or describe, within the meaning of section 102*" the claimed species "*since the genus would include an untold number of species.*" Further, Applicants note that it is established in U.S. patent law that, in order for the teaching of a genus in a reference to anticipate a species that is not specifically named in the reference, the species must be "at once envisaged" from the generic formula. The case law shows that determination as

to whether a species is so "envisaged" depends in part on the number of possible species covered by the genus, with a large number of species supporting a determination of no anticipation and a small number of species indicating possible anticipation (see, e.g., M.P.E.P. § 2131.02).

In the present case, Applicants submit that the general disclosure of Findeis cannot be interpreted as making specific peptides such as those of the present claims at once apparent, because the impressively high number of claims of Findeis (135 claims) are no more than "catch all" claims encompassing no fewer that many billions of possible different peptides, depending on the peptide sequence, the presence or not of modifying groups, and the positions within the peptides at which the L- and D- amino acids are located. For example, claim 20 alone covers many billions of possible different peptides with the presence or not of Y and Z in the formula, and each one of Y or Z encompassing up to 15 D-amino acids. Applicants submit that such general teaching of peptides, as in the Findeis claims, does not have the specificity required to support a rejection for anticipation. Further, the fact that some of the claims (e.g., claims 1, 95, and 97) encompass "only" a few hundred peptides does not change the fact that these peptides are not supported by any working example falling within the scope of the present claims.

Applicants thus submit that the present claims are drawn to novel and patentable antifibrillogenic agents, in view of the Findeis patent (and all other prior art of which Applicants are aware). Further, Applicants note that the present claims cover a limited number of peptides that are clearly defined in terms of structures, and that they have demonstrated antifibrillogenic activity for peptides within the present claims.

In view of the above, Applicants submit that Findeis cannot be properly considered as an enabling anticipatory reference, and that the antifibrillogenic agents of the invention comprise a

novel and patentable species of peptides not "envisaged" from Findeis' extremely broad generic formulas (M.P.E.P. § 2131.02). Applicants thus respectfully request that the rejection over the Findeis patent be withdrawn.

Rejection under 35 U.S.C. § 103(a)

Claims 29 and 32 were rejected under 35 U.S.C. § 103(a) for obviousness over Moriarty et al., Biochemistry 38:1811-1818, 1999, in combination with Findeis et al., U.S. Patent No. 5,854,204. This rejection is now moot, as claim 29 has been canceled and claim 32 has been amended to depend from claim 1.

Provisional Rejection under the Judicially-Created Doctrine of Obviousness Type Double Patenting

Claims 1 and 6-8 were provisionally rejected under the judicially-created Doctrine of Obviousness Double Patenting over claim 27 of U.S. Patent Application No. U.S. Patent Application No. 09/915,092. When the only rejection remaining in a case is a provisional double patenting rejection, an application should be allowed to issue. M.P.E.P. § 822.01. In view of the amendments and remarks provided in this reply, Applicants submit that all of the grounds of rejection in this case, other than the provisional double patenting rejection, have been met. Accordingly, the double patenting rejection should be withdrawn and the case allowed to issue.

Applicants further note that U.S. Patent Application No. 10/345,855 was also cited in this rejection, but it appears that this citation may have been in error, as this cited application is not commonly owned with the present application. Applicants thus respectfully request clarification

as to this aspect of the rejection.

Applicants finally request clarification as to whether reference WO 99/06587, which was cited in an Information Disclosure Statement filed on February 3, 2003, was considered. As is apparent from the enclosed copy of the Form PTO-1449 on which this reference was listed, the Examiner appears to have initialed each reference cited on the same page as this reference, except this reference. Applicants thus respectfully request clarification of this matter.

CONCLUSION

Applicants submit that the claims are in condition for allowance, and such action is respectfully requested. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: July 8, 2005

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SUBSTITUTE FORM PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	Attorney Docket No.	50291/002001
		Serial No.	10/009,122
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		Applicant	Robert Chalifour et al.
		Filing Date	June 18, 2002
		Group	1614
(37 C.F.R. § 1.98(b))			

FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

Examiner's Initials	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation (Yes/No)
SWL	WO 94/05311	17.03.94	WIPO			
	WO 94/14836	07.07.94	WIPO			
	WO 94/19692	01.09.94	WIPO			
	WO 95/05393	23.02.95	WIPO			
	WO 95/05849	02.03.95	WIPO			
	WO 95/08999	06.04.95	WIPO			
	WO 95/12815	11.05.95	WIPO			
	WO 95/23166	31.08.95	WIPO			
	WO 95/31996	30.11.95	WIPO			
	WO 96/13583	09.05.96	WIPO			
	WO 96/28471	19.09.96	WIPO			
	WO 96/34887	07.11.96	WIPO			
	WO 96/37621	28.11.96	WIPO			
	WO 97/08320	06.03.97	WIPO			
	WO 97/32017	04.09.97	WIPO			
	WO 98/02462	22.01.98	WIPO			
	WO 98/05350	12.02.98	WIPO			
✓	WO 98/08868	05.03.98	WIPO			
	WO 98/22120	28.05.98	WIPO			
	WO 99/06587	11.02.99	WIPO			
SWL	WO 99/27944	10.06.99	WIPO			

EXAMINER [signature] DATE CONSIDERED 3/15/05

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with the next communication to applicant.